Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

Copy 1
DEC 12 1935
AGRICULTURAL ECONOMICS
U. S. DEPARTMENT OF AGRICULTURE

CIRCULAR No. 374 OCTOBER 1935
UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

THE KATAHDIN, CHIPPEWA, AND GOLDEN POTATOES[1]

By C. F. Clark, *associate horticulturist*, and F. J. Stevenson, *geneticist, Division of Fruit and Vegetable Crops and Diseases, Bureau of Plant Industry*

CONTENTS

Page
Origin 1
Katahdin 3
  Description 3
  Characteristics 4
  Adaptation 4
  Dissemination 7
Chippewa 7
  Description 7
  Characteristics 8
Chippewa—Continued.
  Adaptation 9
  Dissemination 9
Golden 9
  Description 9
  Characteristics 10
  Adaptation 10
  Dissemination 10
Summary 11

ORIGIN

The Katahdin[2] and Chippewa[3] potatoes were produced as the result of a plant-breeding program, one phase of which has for its definite purpose the production by hybridization and selection of varieties of potatoes resistant to a virus disease known as mild mosaic.

When potato breeding was actively undertaken by the United States Department of Agriculture in 1910 the only disease resistance sought was that against the late-blight fungus (*Phytophthora infestans* (Mont.) DBy.). It was not until some years later that it became evident that the virus diseases were a vastly greater menace to potato production than late blight, because of the fact that potato viruses are transmitted from one crop to the next through tuber infection and, in addition, they cannot be controlled by fungicidal application to the foliage or by seed treatment.

The widespread occurrence of potato virus diseases, such as the various types of mosaic, leaf roll, spindle tuber, unmottled curly dwarf, and streak, necessitates the development of varieties resistant to such diseases. The first step in this direction was toward the development of varieties resistant to one of the most common virus diseases in Maine, mild mosaic.

---

[1] This circular is a revision of and supersedes Circular 276, The Katahdin and Chippewa Potatoes.

[2] The name of the highest and most prominent mountain in Maine, the State in which this variety originated. This name is of Indian origin and signifies "venerable mountain."

[3] The name of a tribe of Indians who occupied the region from Lake Huron to North Dakota.

5988°—35

Seedlings that were apparently resistant to virus infection were selected, and these were crossed with one another and with other seedlings and varieties in an attempt to obtain new varieties with a high degree of resistance to mild mosaic, combined with desirable tuber characters, good habit of vine growth, and productiveness. As the work progressed many very promising seedlings were obtained, but when subjected to the necessary tests the majority of them became infected with one or more types of virus disease or else proved to be unsatisfactory as to yield, table quality, or other desirable characteristics. A number of seedlings have been produced, however, that are highly resistant to mild mosaic in field trials and have, in addition, many other characters that are very desirable from the viewpoint of the commercial grower. Among these seedlings are the Katahdin and the Chippewa.

These two varieties were first grown in 1923 at Aroostook Farm, Presque Isle, Maine. They originated as the result of a cross between two unnamed seedling varieties, nos. 24642 and 40568, each of which was obtained by crossing two commercial varieties. The complete pedigree is as follows:

Katahdin (U. S. D. A. seedling no. 42667)	U. S. D. A. seedling no. 24642	Sutton Flourball Aroostook Wonder
Chippewa (U. S. D. A. seedling no. 42672)	U. S. D. A. seedling no. 40568	Busola Rural New Yorker No. 2

In selecting the parents for this cross the chief characteristics given special consideration were resistance to mild mosaic and good shape of tubers. Studies of the parent varieties had shown that both appeared to possess considerable resistance to mild mosaic. This resistance has evidently been transmitted to the progeny, since both Katahdin and Chippewa, as well as other seedlings derived from the same cross, have so far given evidence of being very highly resistant to this disease. The type of tuber characters desired was found in seedling no. 40568, which was used as the female parent. The tubers of this variety were of good proportions, regular in outline, with smooth surface and shallow eyes. These characters are found to a high degree in both the Katahdin and the Chippewa.

Although both parents were comparatively low in yield so far as observations indicated, the combination resulted in increased vigor, as is evident from several high-yielding seedlings in this progeny.

The Golden potato is the result of an objective to produce a yellow-fleshed variety adapted to American conditions, which possesses such desirable characteristics as high-yielding ability, good tuber shape, and high-cooking quality.

The yellow-fleshed potato is very highly prized in what is believed to be its ancestral home, the region of the Peruvian Andes. In Europe several varieties of commercial importance have been developed, some of which appear to have achieved considerable popularity. Several introductions of this type of potato have been made into the United States from South American and European sources, but from the commercial standpoint they have not compared favorably with the white-fleshed varieties of North American origin. The South American varieties in particular have invariably produced very low yields of small, rough tubers with deep eyes and are in general susceptible to many of the common potato diseases.

From a cross between two unnamed seedlings, obtained from a series of crosses in which were included as parents both yellow-fleshed and white-fleshed seedlings and commercial varieties, Golden was produced. It was first grown at Presque Isle, Maine, in 1928. Its complete pedigree is given below:

Golden (U. S. D. A. seedling no. 44428).
- U. S. D. A. seedling no. 43543.
  - U. S. D. A. seedling no. 42783, naturally fertilized.
    - Majestic.
    - Unknown variety.
- U. S. D. A. seedling no. 43106.
  - U. S. D. A. seedling no. 40568.
    - Busola.
    - Rural New Yorker No. 2.
  - U. S. D. A. seedling no. 41989.
    - U. S. D. A. seedling no. 24642.
      - Sutton.
      - Flourball.
      - Aroostook Wonder.
    - Unnamed variety from Costa Rica.

The characteristics that were given special consideration in selecting the parents of this cross were the yellow flesh of the tubers, the vigorous growth of the vines found in both seedlings, and the high cooking quality of the maternal parent, U. S. D. A. seedling no. 43106. The varieties included in the ancestry which had yellow flesh were U. S. D. A. seedling no. 43106, U. S. D. A. seedling no. 43543, U. S. D. A. seedling no. 41989, U. S. D. A. seedling no. 42783, and the unnamed variety from Costa Rica.

KATAHDIN

DESCRIPTION

Plants medium to large, spreading; stems thick, prominently angled; nodes slightly swollen, green; internodes slightly reddish purple or green; wings slightly waved or straight, green; stipules large, green, glabrous; leaves very long, broad, midrib green and scantily pubescent; primary leaflets close, medium green, 4 pairs, large, ovate, mean length 77.23±0.55 mm (3.04 inches), mean width 49.07±0.38 mm (1.93 inches), index 63.54±0.27[4]; petioles green; secondary leaflets many, three positions—on midrib between pairs of primary leaflets, at junction of midrib and petioles of primary leaflets, on primary leaflet petioles; tertiary leaflets medium to many in number; inflorescence much branched, leafy bracts none; peduncles short to medium, pubescence scant; pedicels medium to long, green, pubescence scant.

Flowers.—Calyx lobe tips long, little pigmented to green, pubescence scant to abundant; corolla medium size, 30–32 mm (1.18 inches) diameter, color a light lilac (corresponding to Ridgway's[5] mauvette); anthers orange-yellow, pollen medium to abundant, good quality; style straight; stigma globose, multilobed, green.

Tubers short elliptical to roundish, medium thick, mean length, 82.05±0.20 mm (3.23 inches)[6]; mean width 80.09±0.17 mm (3.16 inches),[6] mean thickness 60.53±0.20 mm (2.38 inches)[6]; indexes, width to length 97.80±0.32,[7] thickness to width 75.74±0.30,[8] thickness to length 73.90±0.32[8]; skin smooth, self-colored, dark cream-buff[9]; eyes shallow, same color as skin; eyebrows medium long, curved, medium prominent; flesh white; sprouts, color when developed in the dark, pale vinaceous-lilac (Ridgway); maturity late.

---

[4] Calculated by dividing the width by the length of each of 100 leaflets and multiplying the average of these ratios by 100. The leaflets were taken from the fourth leaf from the top of the stem, one leaflet, the distal left lateral, being taken from each leaf. Since the potato leaflet is asymmetrical, the length was determined by taking the average of the measurements from the apex to the base of each respective lobe. This is a modification of the method described in the following work: SALAMAN, R. N. POTATO VARIETIES, pp. 163–170, Cambridge, 1926.

[5] RIDGWAY, R. COLOR STANDARDS AND COLOR NOMENCLATURE, 43 pp., illus. Washington, D. C., 1912.

[6] The average of measurements of 100 tubers, each of a weight of approximately 8 ounces (223–233 g).

[7] Calculated by dividing the width of each 100 tubers by the length and multiplying the average of these ratios by 100. The data used for calculating the indexes were taken from the same measurements as those used to designate the dimensions of the tubers.

CHARACTERISTICS

The Katahdin potato has been under observation and test at Presque Isle, Maine, for a period of 12 years, during which time it has been highly resistant to mild mosaic, as shown by the fact that not a plant has been found infected with this disease in the field. It is not, however, resistant to spindle tuber or leaf roll.

Like all varieties of potatoes, the Katahdin varies somewhat in cooking quality, according to the environmental conditions under which it is grown. Cooking tests, however, show that tubers of high quality are produced when this variety is grown under favorable conditions. The results of cooking tests made in cooperation with the Bureau of Home Economics of the United States Department of Agriculture at different times have shown the quality of the stock grown at Aroostook Farm, Presque Isle, Maine, to range from fair to very good, with good as the average, these terms being used to designate the three highest classes for quality in a scale of five. Reports from cooperators in other sections of the country show that the Katahdin compares favorably in cooking quality with standard varieties when grown under the same conditions.

The tubers are smooth, short elliptical to roundish, with few, very shallow eyes (fig. 1). The ability to maintain this desirable shape under adverse soil and climatic conditions is an important characteristic of this variety. It also consistently produces a very high percentage of No. 1 potatoes. These valuable features have been emphasized in reports from Michigan, New Jersey, Oregon, Iowa, and Colorado. A characteristic which gives it an advantage over the varieties of the Rural group in many places is its tendency to set tubers early.

Under storage conditions at Presque Isle, observations have shown the keeping quality of the tubers to be very good.

ADAPTATION

The Katahdin has been given extensive tests for the last 5 years (1930–34) to determine its adaptation. As a result of these tests it has been distributed to a limited number of growers in States in which it seems to have the greatest promise.

The tests and distribution have been made as part of the cooperative potato-breeding program which is being carried on between the United States Department of Agriculture and a number of the State experiment stations. The reports from different localities from year to year are variable so that it is difficult to make definite statements concerning the adaptability of the variety, but it is becoming commercially important in Maine, Michigan, Colorado, Idaho, Iowa, and New Jersey.

In comparative tests at Presque Isle, Katahdin yielded 99.2 percent as much as the Green Mountain and 107 percent as much

---

[8] Based on measurements of the same tubers as those used for determining the width to length index, using the same methods of calculation.

[9] Between Ridgway's chamois and cream-buff; classed as a white potato by the commercial trade.

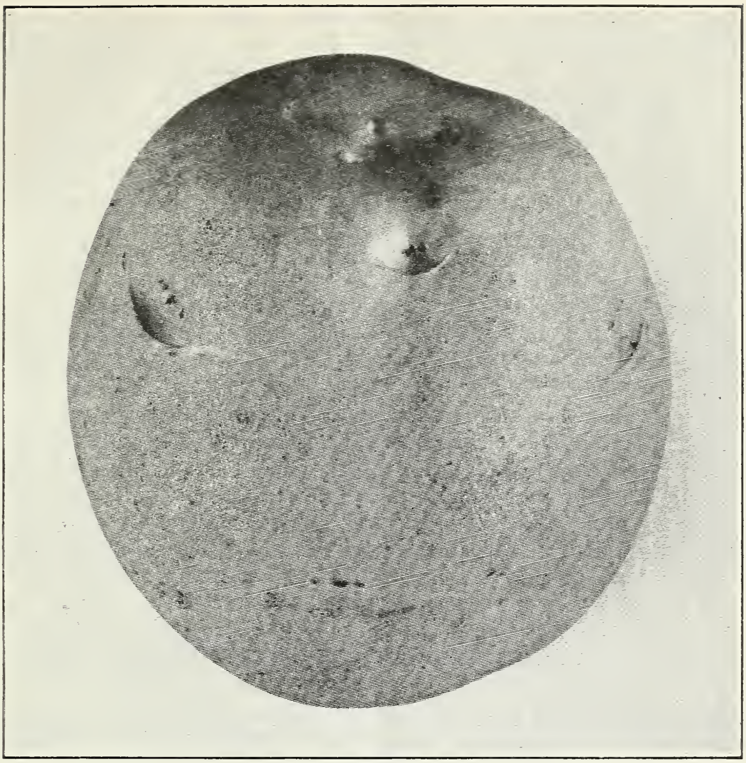

FIGURE 1.—An ideal tuber of the Katahdin variety.

as Rural New Yorker No. 2 for an average of 4 years (1931–34) (table 1).

TABLE 1.—*Comparison of yields of new and standard varieties of potatoes at Presque Isle, Maine, 1931–34*[1]

Variety	Primes, per acre						Total, per acre					
	1931	1932	1933	1934	4-year average	Average yield compared with percentage of Green Mountain	1931	1932	1933	1934	4-year average	Average yield compared with percentage of Green Mountain
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Per-cent*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Per-cent*
Green Mountain	398	358	233	435	356	100	424	385	289	470	392	100
Rural New Yorker No. 2	389	350	183	395	329	92.4	418	372	235	414	360	91.8
Irish Cobbler	330	375	173	446	331	93.0	363	399	231	479	368	93.9
Katahdin	387	383	195	445	353	99.2	407	412	243	475	384	98.0
Chippewa	470	392	204	487	388	109.0	505	446	260	532	436	111.2
Golden	500	467	251	578	449	126.1	548	521	318	634	505	128.8

[1] A difference of 10.9 percent for primes and 9.3 percent for totals is significant if 3 times the probable error is taken as the criterion of significance.

The 1934 report from Michigan shows that under conditions such as prevailed that year the Katahdin does not outyield the Rurals to any great extent. In 34 tests in comparison with Russet Rural, Katahdin yielded 240 bushels to the acre and Russet Rural 237. In 10 tests with White Rural (Rural New Yorker No. 2), Katahdin yielded 213 bushels to the acre and White Rural 190 bushels. The differences were far more striking in 1931, however, when conditions were unfavorable during the latter part of the growing season. The Katahdin had set its tubers earlier and had made a reasonably good crop before the unfavorable conditions set in, but the Rurals were later in setting their tubers and failed to produce as many prime potatoes as the Katahdin, in spite of the fact that in some instances the total yield of the Rurals was greater. As an example, in the Mayville test in 1931, the Russet Rural produced 257 bushels per acre and the Katahdin 226 bushels. The yields of U. S. No. 1's, however, reverse the order of the two, Katahdin yielding 215 bushels and Russet Rural 156. The reports from the farmers who cooperated with the Michigan Agricultural Experiment Station in making the tests indicate that they are satisfied that Katahdin has a place as one of Michigan's leading varieties. A few growers, who formerly raised Russet Rural for inspection and certification, have discontinued this variety and are now raising Katahdin. It will probably replace the Rurals in many sections of the State. This variety is very promising in certain sections of Colorado also. C. H. Metzger, of the Colorado Agricultural Experiment Station, reported as follows:

> We had Katahdins in a test with Brown Beauties (Prolific) in the San Luis Valley in which the Katahdins outyielded all strains of Brown Beauties and produced twice the number of U. S. No. 1 tubers.

In 1931 and 1932 Katahdin was grown in Oregon in comparison with the Russet Burbank (Netted Gem) and Burbank. The 1932 report of E. N. Bressman, of the Oregon Agricultural College, showed that in Lane County 90 percent of the Katahdin tubers graded No. 1, whereas the Burbank varieties grown in comparison graded approximately 50 percent No. 1. The conditions, of course, were unfavorable for the Burbank.

The 1933 report from J. M. Raeder, of the University of Idaho, at Moscow, showed again the ability of the Katahdin to produce a large percentage of No. 1's in spite of rather adverse conditions. It was grown in comparison with four standard varieties. Marketable potatoes for each of the different varieties was as follows: Russet Burbank (Netted Gem) 31 percent, Irish Cobbler 39 percent, Early Ohio 52 percent, Bliss Triumph 69 percent, and Katahdin 87 percent. The report states further that the Katahdin was free from the mottling types of virus troubles and was an excellent yielder, producing a fine type of tuber. The plans are to distribute it to growers in northern Idaho in the cut-over sections to replace the Charles Downing (Idaho Rural) variety.

The 1934 report from Iowa states:

> Katahdin outyields all the standard varieties. The tubers begin to form early and the plant holds up exceptionally well under adverse conditions. Late maturity is probably its most serious defect for this section. There has been some complaint from commercial growers about its poor cooking

quality, but this is probably due to the fact that the stock was immature at digging time.

Other reports are not so favorable. Rurals have outyielded the Katahdin in tests at Ithaca, N. Y., Terra Alta, W. Va., on the mineral soils of Wooster, Ohio, and for 3 years at Oakland, Md. It has been outyielded by Green Mountain in Rhode Island and Massachusetts. The results at this date show that it will probably not replace the Green Mountain under conditions very favorable for that variety, such as usually exist in the northeastern section of the United States. If, however, mosaic resistance and smoothness of tuber are taken into consideration, it will be preferred by many growers. It should replace the Rurals, in part at least, in Michigan and Iowa. It has yielded well in tests with standard varieties in New Jersey, in the higher altitudes of North Carolina and Colorado, and under some conditions in Oregon and Idaho.

Under conditions favoring the Rurals, the Katahdin has been outyielded by them, but under adverse conditions, such as prevailed in parts of Michigan in 1931, the Katahdin outyielded the Russet Rural. In Ohio it did not show any superiority over the Rural New Yorker No. 2 in 1931 and 1932. It did, however, make a good showing on some of the peat lands of Ohio in 1933.

DISSEMINATION

The seed stock that the United States Department of Agriculture has produced has been given to the cooperating State experiment stations for their tests. The Department has no seed for general distribution. As a result of the increase of the material grown in the various test plats, however, 36,000 bushels of this variety were produced in Michigan in 1934, 5,000 bushels of which were certified. Maine produced approximately 35,000 bushels of certified Katahdin seed and Colorado 1,000 bushels. Several other States produced varying amounts. The total production for the United States probably exceeds 100,000 bushels.

CHIPPEWA

DESCRIPTION

Plants medium to large, spreading; stems thick, prominently angled; nodes slightly swollen, green; internodes slightly reddish purple; wings slightly waved or straight, green; stipules medium large, green, glabrous; leaves long, broad, midrib green, pubescent; primary leaflets close, green, four pairs, large, ovate, mean length 84.65±0.43 mm (3.33 inches), mean width 47.46±0.27 mm (1.87 inches), index 56.27±0.18[10]; petioles green; secondary leaflets medium in number, on midrib between pairs of primary leaflets; tertiary leaflets none; inflorescence medium in branching; leafy bracts medium in number to none; peduncles short to medium, pubescence scant; pedicels medium in length, little pigmented, pubescence scant.

Flowers.—Calyx lobe tips long, little pigmented to green, pubescence scant; corolla medium in size, color a light lilac (Ridgway's mauvette) with white tips; anthers pale orange-yellow, pollen scant, poor; style straight, stigma globose, green.

Tubers elliptical to oblong, medium thick, mean length 89.05±0.28 m. (3.51 inches),[11] mean width 78.77±0.22 mm (3.10 inches), mean thickness 57.27±0.16

---

[10] See footnote 4.
[11] See footnote 6.

mm (2.26 inches); indexes, width to length 88.73±0.45,[12] thickness to width 72.84±0.30,[13] thickness to length 64.52±0.34[13]; skin smooth, self-colored, dark creamy buff[14]; eyes shallow, same color as skin; eyebrows medium long, curved, medium prominent; flesh white; sprouts, color when developed in the dark, creamy white with tips of scales a very dilute tint of pale rose-purple (Ridgway); maturity medium late, about midway between Irish Cobbler and Green Mountain.

CHARACTERISTICS

The Chippewa potato has shown a high degree of resistance to mild mosaic. In a total of 16,000 plants of this variety grown on the breeding plots at Presque Isle during the last 12 years, only 20 plants showing mosaic symptoms have been found; 5 of these showed the rugose type of mosaic, while the type occurring in the other 15 plants was undetermined. In the disease-resistance test plots, where this variety was grown between rows of Green Mountain stock known to be infected with mild mosaic, no Chippewa plants were found which showed symptoms of this disease, while under the same conditions 68 percent of the plants of the Green Mountain checks contracted the disease. The Chippewa is not resistant to leaf roll or spindle tuber.

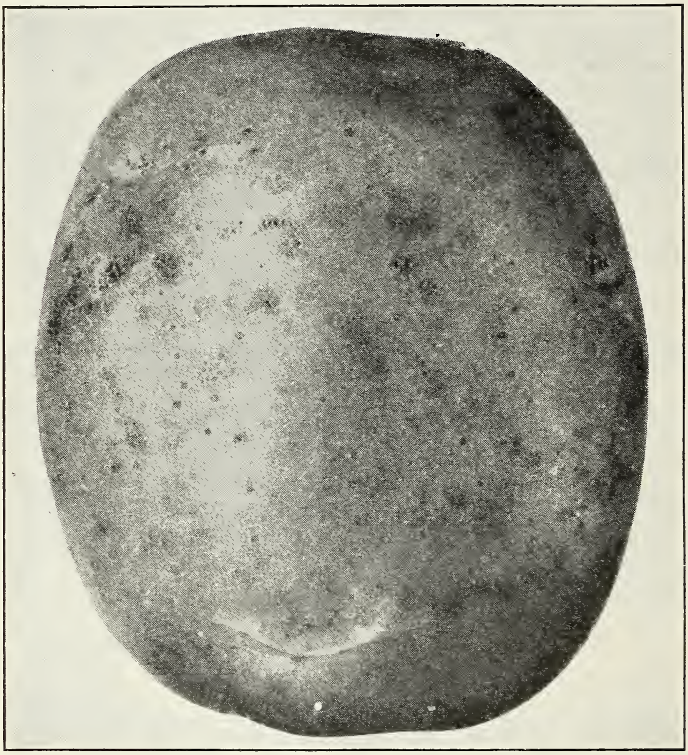

FIGURE 2.—An ideal tuber of the Chippewa variety.

---

[12] See footnote 7.
[13] See footnote 8.
[14] See footnote 9.

The tubers are smooth, regular in outline, with very shallow eyes, oblong to elliptical, and slightly longer in proportion to the width than the tubers of Katahdin (fig. 2).

Cooking tests of Chippewa have shown that it is equal to the Rural New Yorker No. 2 in quality when grown on the Aroostook Farm, at Presque Isle. Under the same conditions it is not quite equal to Green Mountain in quality.

In all tests in which yield records have been obtained it has consistently been a high yielder. Comparative tests at Presque Isle have shown that in total tubers produced the Chippewa yields were significantly higher than Katahdin, Irish Cobbler, Green Mountain, and Rural New Yorker No. 2 for an average of 4 years (1931–34). If the comparison is made on the basis of primes it yielded approximately 9 percent higher than Green Mountain and 10 percent higher than Katahdin for the 4-year average.

A distinct advantage possessed by the Chippewa is that it matures before the usual time of digging the late crop. While it is not classed as an early variety, it sets its tubers relatively early and matures somewhat earlier than Green Mountain and other late varieties. One of its characteristics, which may be important on the Eastern Shore of Maryland and Virginia and in other sections where an early and a late crop are grown, is its ability to give high yields for either crop. This is indicated by results obtained in 1934 at the United States Field Station, Beltsville, Md.

ADAPTATION

The Chippewa was introduced 1 year later than the Katahdin, and as a result the tests of Chippewa in sections of the country other than Presque Isle have been less extensive. However, the few tests which have been made show considerable promise for the variety and a wide range of adaptability.

Reports of tests in Maine, Michigan, New Jersey, Minnesota, North Dakota, Iowa, Florida, and Louisiana are all very favorable with respect to yields and freedom from the mosaic diseases.

In Iowa, in 1934, yields in most of the tests were low on account of the drought. The results of the few which did succeed, however, were very encouraging. At Ames it is considered the most promising of the seedlings so far introduced.

The Michigan tests indicate that this variety will become commercially important in that State. In one test on muck soil it yielded 375 bushels per acre compared with 265 bushels for Irish Cobbler. The tubers are preferred, too, because they are smoother than those of the Irish Cobbler.

DISSEMINATION

Approximately 1,500 bushels of Chippewa were available for planting in 1935. Of this quantity, Maine produced about 500 bushels, Minnesota 400, and Michigan approximately 125. Other States also have small quantities of seed.

GOLDEN

DESCRIPTION

Plants large, spreading; stems medium thick, prominently angled; nodes slightly swollen, slightly reddish purple; internodes slightly reddish purple;

wings straight, green; stipules medium size, green, with scant, very fine pubescence on under side; leaves medium in length and width; midrib green; sparsely pubescent; primary leaflets green, five pairs, ovate, medium size, mean length 64.29±0.30 mm (2.53 inches), mean width 36.23±0.19 mm (1.43 inches), index 56.56±0.17[15]; petioles green; secondary leaflets many, 3 positions—on midrib between pair of primary leaflets, at junction of midrib and petioles of primary leaflets, on primary leaflet petioles; tertiary leaflets medium in number; inflorescence little branched; leafy bracts none; peduncles short, green, sparsely pubescent; pedicels short, green, sparsely pubescent.

Flowers.—Calyx lobe tips medium in length, green, sparsely pubescent; corolla medium in size, white; anthers lemon yellow to greenish yellow, pollen scant, poor; style straight, stigma globose, multilobed, green.

Tubers of medium size, roundish, mean length 85.36±0.35 mm (3.36 inches),[16] mean width 74.23±0.24 mm (2.92 inches), mean thickness 60.71±0.23 mm (2.39 inches); indexes, width to length 87.56±0.52,[17] thickness to width 81.99±0.41,[18] thickness to length 71.62±0.48[18]; skin smooth, self-colored, dark cream-buff;[19] eyes medium shallow, same color as skin except the central eye in the apical bud cluster, which is a pale rose-purple (Ridgway); eyebrows medium long, curved, medium prominent; flesh pale yellow (Ridgway's Naples yellow); sprouts, color when developed in dark, white with tips of scales frequently showing trace of very dilute tint of rose-purple (Ridgway); maturity late.

CHARACTERISTICS

The Golden potato produces tubers of dark cream-buff color, smooth, with medium shallow eyes (fig. 3).

It has outyielded the standard varieties, Green Mountain, Rural New Yorker No. 2, and Irish Cobbler, as well as the new varieties, Katahdin and Chippewa, in the yield tests at Presque Isle. The data given in table 1 show its superiority as a high-yielding variety. For an average of 4 years it yielded 449 bushels of primes per acre, compared with 356 bushels for Green Mountain.

The cooking quality, based on tests of stock grown at Presque Isle, is very good.

ADAPTATION

As shown by the yield tests at Presque Isle, this variety is exceptionally well adapted to conditions prevailing in that locality. The 1934 cooperative tests by State experiment stations, however, indicate that it has a very limited range of adaptation, due largely to its habit of setting a large number of tubers. If the conditions are not the best, many of these tubers fail to make No. 1 grade, with the result that while the total yields are relatively high, those of primes are low. Further tests will be made of this variety but so far it is promising in only two localities—Aroostook County, Maine, and in a limited area of the Upper Peninsula of Michigan.

DISSEMINATION

Small quantities of seed stock have been sent to several of the cooperating State experiment stations for comparative tests. Some of the stock from these test plots has been increased, with the result that approximately 1,000 bushels were available for seed in 1935.

---

[15] See footnote 4.
[16] See footnote 6.
[17] See footnote 7.
[18] See footnote 8.
[19] See footnote 9.

SUMMARY

The Katahdin and Chippewa potatoes are resistant to mild mosaic, but not to leaf roll or spindle tuber. They are high-yielding varieties, producing tubers of excellent shape, with shallow eyes and desirable cooking quality.

The vines of the Katahdin mature late, but under some conditions the tubers set comparatively early. In several tests in Michigan, North Dakota, Oregon, and Idaho this variety has shown the ability to produce a good crop of tubers of desirable shape under relatively adverse conditions. The tests have indicated that it will partly replace the standard varieties in certain sections of Michigan, Iowa, New Jersey, Oregon, northern Idaho, and the higher altitudes of Colorado.

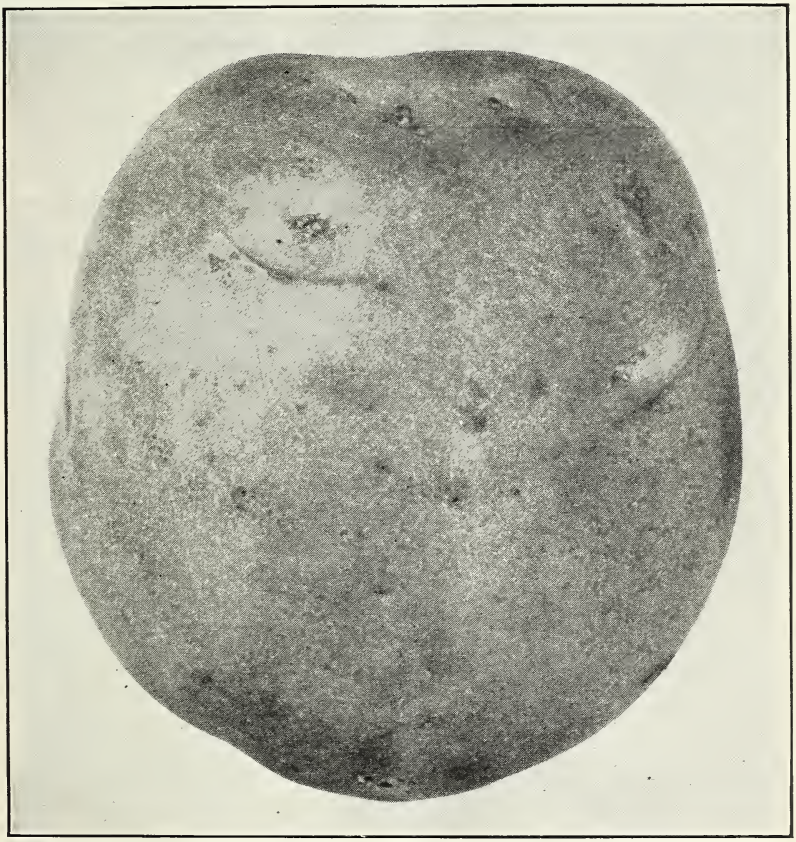

FIGURE 3.—An ideal tuber of the Golden variety.

The Chippewa resembles the Katahdin in many of its characteristics, though it differs somewhat from it in shape, the tubers being on the average slightly longer in relation to their width than the tubers of the Katahdin. Because it is considerably earlier than the Katahdin and somewhat earlier than the Green Mountain, it is probably better adapted to certain parts of Michigan, Minnesota, North Dakota, and other States where similar conditions prevail. In tests at Presque Isle, Maine, it has yielded consistently higher in total number of bushels per acre than Katahdin, Irish Cobbler, Green Mountain, and Rural New Yorker No. 2. Reports from North Dakota, Minnesota, Michigan, Iowa, New Jersey, Florida, and Louisiana indicate that this variety has a wide range of adaptability.

The Golden potato is a late-maturing yellow-fleshed variety that produces large yields of medium-sized, roundish tubers with rather shallow eyes. It ranks high in cooking quality. It is particularly adapted to northern Maine where it has significantly outyielded Green Mountain, Irish Cobbler, Rural New Yorker No. 2, Katahdin, and Chippewa for an average of 4 years.

Tests in a number of States indicate that its adaptation is more limited than either of the other varieties.

The total production of Katahdin in the United States for 1934 probably exceeded 100,000 bushels, of which 41,000 bushels were certified.

There were about 1,500 bushels of Chippewa and approximately 1,000 bushels of Golden available for the 1935 crop.

The seed that the United States Department of Agriculture produces is disseminated to the cooperating State experiment stations for test purposes. The Department has no seed of any of these varieties for general distribution.

U. S. GOVERNMENT PRINTING OFFICE: 1935

For sale by the Superintendent of Documents, Washington, D. C. - - - - - - Price 5 cents